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SRI LANKA CONNECTING REGIONAL ECONOMIES (USAID/CORE)

Assessment of Logistics in Sri Lanka's Eastern, North Central and Uva Provinces

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Sri Lanka Connecting Regional Economies (USAID/CORE) Program

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SRI LANKA CONNECTING REGIONAL ECONOMIES (USAID/CORE) PROGRAM

Assessment of Logistics in Sri Lanka's Eastern, North Central, and Uva Provinces

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The author's views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

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Abbreviations and Acronyms

ADB	Asian Development Bank
BIA	Bandaranaike International Airport
CORE	Connecting Regional Economies
GDP	Gross Domestic Product
GTZ	Gesellschaft für Technische Zusammenarbeit
IMF	International Monetary Fund
INGO	International Non-Governmental Organization
LKR	(Sri Lanka) Rupees
NGO	Non-Governmental Organization
PMB	Paddy Marketing Board
SLR	Sri Lanka Railways
USAID	United States Agency for International Development

Executive Summary

This report presents an assessment, conducted in August 2009, of the logistics system serving three of Sri Lanka's provinces: Eastern, North Central, and Uva. Logistics refers to the movement and storage of goods and, in its broadest definition, also includes passenger transportation. Because decisions regarding the timing, modes, and routes for movements should be based on reliable, timely information, some aspects of communications can also fall within the purview of logistics. Not including communications, in 2008, this sector accounted for 10.6 percent of Sri Lanka's Gross Domestic Product (GDP); in comparison, agriculture accounted for 13.4 percent of GDP.

Roadways

The density of Sri Lanka's road network is higher than in most nations at comparable levels of development. Outside of Colombo and in a few of Sri Lanka's largest cities, virtually all roadways are two-lane, usually without paved shoulders. Such roadways are prone to congestion and delays, are dangerous due to risks from head-on collisions, and deteriorate rapidly due to wear as vehicles slip off and climb back onto the roadway.

Road congestion is much less of a problem in the Eastern, North Central, and Uva Provinces, than in much of the rest of the country. An impressive array of projects has been undertaken to rehabilitate roadways and replace bridges destroyed during the conflict and the Tsunami. The most severe intercity and interregional road constraints in the country are due to congestion in its westernmost provinces, not in Uva, North Central, and the Eastern Provinces.

Overall, the motor carrier industry appears to be efficient and highly competitive. Logistics personnel from several of Sri Lanka's largest firms indicated that they are able to find reliable carriers in the market which can meet or exceed their standards for equipment quality and performance. The very large majority of interregional carriers are based in the western part of the nation. There are, of course, carriers based in the region for local haulage. Again, these appear to be adequate for current needs.

As for busing, four years ago, in 2005, a mixed system was established, with government and private bus companies competing in the same markets. The government regulates entry, rates, and routes of the private operators. Simply put, despite very large subsidies, the state operated bus system is collapsing. Even given the subsidies, the system realizes losses which are 'financed' by allowing capital to deteriorate. Without radical changes, the outcome is obvious, regrettable, and not in the distant future.

Railroads

The Sri Lanka Railways (SLR) is a State owned and operated railway. It has 1,640 kilometers of rail lines. Due to the recent conflict, 440 kilometers of these lines are not in operation, but are expected to be back in service by 2013. An extension of the Coastal Line is being constructed to the new Port of Hambantota. This is expected to be completed by April 2010.

In 2008, the railroad accounted for five percent of intercity passenger movements and barely one percent of intercity freight movements. Its revenues cover only a fraction of total costs. Particularly given the compact size of the country, SLR should not attempt to be a full service railroad along all of its lines. Rather, it needs to develop and implement a long term, strategic plan which identifies specific services it can offer along different parts of its system. In other words, SLR should identify niches in which it can successfully compete and scale back or cease the rest.

Airports

Sri Lanka's 14 airports appear more than adequate to meet the country's current and medium term domestic, civil aviation needs. Due to the conflict, these airfields were turned over to the Sri Lankan Air Force. The process of returning air ports to full or partial civilian control is just beginning. By early 2010, it is anticipated that the Sri Lankan Air Force will hand the Ampara Airport back to full civilian control. At Trincomalee there will be dual management, including a completely civilian side of the field.

The Bandaranaike International Airport (BIA) at Colombo is the nation's only international airport. Overall, the service levels for processing freight are satisfactory. However, the importance of this link in the logistics system cannot be overstated. Through BIA flows Sri Lanka's most high-valued exports, many of which, such as fish and agricultural products, have strict handling and climate control requirements. Particularly as significant growth in such exports is anticipated, high priority should be placed on ensuring that the highest standards are maintained and that processing capacities increase sufficiently to meet demands.

A second international airport is being established at Hambantota. As the overall economy of the northern and northeastern regions of the country grows, Sri Lanka should consider developing the Trincomalee Airport into the nation's third international airport. At the time of this writing, the only airport in or near the three provinces of interest in this assessment, which is closed to civilian flights, is Vavuniya.

Two airlines have regularly scheduled flights to Jaffna and several will serve other airports on a charter basis. The Air Force also transports civilians to points in the East and North, marketing these services through its travel agency, Heli Tours. The Ministry of Ports and Aviation has stated that military flights of civilians is viewed as a stopgap measure and that flights of civilians by the Air Force will be phased out as soon as civilian flights are sufficient to meet demands. This transition should be encouraged.

Ports

The Port of Colombo is Sri Lanka's dominant port. During 2008, new equipment was installed at the Port of Colombo's existing container handling facility. Moreover, additional capacity is being developed for the port through the Colombo Port Expansion Project. Augmenting these efforts, development of a new port at Hambantota is underway. A much smaller scale port development project is planned for the Port of Galle.

In the Eastern Province, a regional port is being developed at Oluvil. Elsewhere along the coast there are a series of generally small harbors and open beach landings well-suited for tourism and small-scale fishing typical of the area. In Trincomalee, Prima Flour and Tokyo Cement have sophisticated, privately

owned, facilities to receive and process raw materials and then transport product overland throughout the country. Outside of these facilities, there are a few older vintage cranes for general cargos along a pier which can handle up to four (small or medium size) vessels, and some dilapidated, apparently unused warehouses. It seems likely that Trincomalee's most important potentials are fishing and tourism.

Storage and Collection/Distribution Centers

Throughout the three provinces, particularly in the Eastern Province, there is a dearth of storage facilities and complete absence of collection/distribution centers. In addition, the large majority of agricultural producers, even those with storable commodities, such as paddy, do not have any storage facilities. The paucity of storage forces producers to sell products when they are produced, rather than in accordance with market signals or cash flow needs.

Analysis of the Sector

Low Population Density, Low Production Levels, and Significant Distance to Markets in Western Sri Lanka and International Ports/Airport

The Eastern, Uva, and the North Central Provinces account for 44 percent of Sri Lanka's land mass but only 20 percent of its population. Relative to western Sri Lanka, income and production levels are very low. These three provinces combined probably account for little more than ten percent of Sri Lanka's GDP. Under such circumstances, it is not surprising that virtually all interregional motor carriers are located in western Sri Lanka. To accelerate recovery, including establishment and expansion of intraregional motor carriage, the establishment of warehouses and collection/distribution centers should be encouraged.

Dearth of storage and collection/distribution centers: In the Eastern Province, there are virtually no modern warehouses or collection/distribution facilities.

Policy Constraints and Opportunities

Security Checks: While there still are numerous police and military checkpoints throughout the region, delays normally are minimal.

Commitment to restoring road system: Road and bridge repair/upgrade projects, combined with reduced scrutiny at checkpoints, have transformed the Eastern Province from being one of the worst areas of Sri Lanka for road transport into one of the best.

Government openness to non-traditional approaches to promote development in the Eastern Province: The Government may be open to considering approaches in the East which involve the private sector to greater degrees than is typically the case elsewhere.

Significant Government and Donor Activity in the Region

Sri Lankan Government and Bilateral and Multilateral donor activities have been concentrated, primarily, on restoring and upgrading the road system. Work is also beginning on restoring the SLR's Mannar Line and northern portions of the Main Line. The other significant, ongoing work in the region is development of the port facilities at Oluvil. Summary of Areas Recommended for Donor Interventions, Policy Changes, or Further Investigation:

Recommendations

Roadways

- Give higher priority to adding shoulders and periodic passing lanes on existing roadways.
- Investigate possibilities for improving the system of taxes and incentives to align better social costs and private user costs.

Railroad

- Develop and implement a strategic plan which identifies a small set of niches in which the railroad can have competitive advantages, and reduces or eliminates other activities.
- Explore approaches for greater private sector involvement.

Busing

- To avert collapse of the State-owned busing system, consider approaches which include more private sector involvement.

Storage and Collection/Distribution Centers

- Encourage the development of such facilities in the eastern and northern parts of the country.
- Communicate knowledge about the benefits of storage facilities to small agriculturalists and fishermen.
- Establish training programs to ensure that the local labor force has the necessary skills for operating these facilities.

Strategy for CORE

Intervention Options

Storage and Collection/Distribution Centers:

The most promising area for interventions is support for the establishment or expansion of storage facilities for producers, producer associations, and SMEs, and collection/distribution facilities if and as they are established in the region. USAID/CORE should investigate if there are possibilities for interventions which could accelerate the speed or increase the overall impacts of the planned collection/distribution centers and ancillary activities (such as food processing) in the East. Also consider interventions to facilitate the acquisition of storage facilities by growers and fishermen or local SMEs. In the Main Report an example is presented regarding paddy.

Information and Training:

There may be opportunities for interventions which improve knowledge about storage and other product preservation strategies and interventions which contribute to training individuals for skills related to warehousing. USAID/ CORE could invite ice producers to provide information on existing technologies for cooling and preserving product, including on board ice making capacities to support local producers. As storage and, in particular, collection/distribution facilities develop, there will be needs for skilled laborers. USAID/CORE might consider supporting efforts to deliver such training.

Reform of State-Owned Busing:

USAID/CORE might consider funding a small study investigating options for reforming Sri Lanka's public sector bus system. Given CORE's regional emphasis, this could focus on one or more of the target provinces.

1. Introduction

This report presents an assessment, conducted in August 2009,¹ of the logistics system serving three of Sri Lanka's provinces: Eastern, North Central, and Uva. Logistics refers to the movement and storage of goods and, in its broadest definition, also includes passenger transportation. Because decisions regarding the timing, modes, and routes for movements should be based on reliable, timely information, some aspects of communications can also fall within the purview of logistics. Not including communications, in 2008, this sector accounted for 10.6 percent of Sri Lanka's GDP; in comparison, agriculture accounted for 13.4 percent of GDP. (see Central Bank of Sri Lanka).²

An overview is presented of the current situation regarding the logistics system and ongoing developments. Potential strategies for interventions by government and private donors are presented which could accelerate recovery and growth of the sector and the overall economy. Of the three provinces, the Eastern Province was most directly affected by the recent conflict and is the most remote from the more developed western half of the nation. In addition, the Eastern Province's lengthy coastal areas may offer opportunities not shared by North Central and Uva Provinces. For these reasons, the primary focus is on the Eastern Province.

By Sri Lankan standards, physically the three provinces of interest in the analysis are large, accounting for over 44 percent of the nation's total land area. With just under 20 percent of Sri Lanka's population, these provinces have less than half the population density of the rest of the island. Economically, the three provinces probably account for somewhat more than 10 percent of Sri Lanka's GDP.

¹ For a list of meetings held during the course of the assessment, see Appendix 1.

² Despite Sri Lanka's importance for transshipments, the large majority of logistics activity relates to domestic movements. Transport accounted for 10.1 percent of GDP and Cargo Handling, Ports, and Civil Aviation accounted for 0.5 percent.

2. Current Situation

2.1 Infrastructure Overview

2.1.1 Roadways

Road transport accounts for over 70 percent of all traffic in Sri Lanka. The density of Sri Lanka's road network is higher than in most nations at comparable levels of development. Sri Lanka has 116,862 kilometers of roadways, more than 80 percent of which are paved. While the road network is denser in the western half of the island, the road network in the North Central, Eastern, and Uva Provinces is quite extensive. Nevertheless, there are serious shortfalls in the existing road system which will have to be addressed if they are not to become significant impediments to economic growth.

Outside of Colombo and a few of Sri Lanka's largest cities, virtually all roadways are two lane, usually without paved shoulders. Even with moderate traffic levels, such roadways are prone to congestion and delays because any slow or disabled vehicle can affect all vehicles in one direction. This is particularly true in Sri Lanka, given that a significant portion of the vehicles are generally slower, two- and three-wheeled vehicles. In addition to being congestion prone, these roadways are dangerous, because overtaking another vehicle always involves risks of head on collisions. Finally, the absence of shoulders greatly accelerates the breakdown of roadways as vehicle tires frequently slip off and then climb back onto the roadway.

Road congestion is much less of a problem in the Eastern, North Central, and Uva Provinces, than in much of the rest of the country, because these provinces have:

1. Less than half the population density; and
2. Less traffic per capita due to depressed economic conditions.

In addition, an impressive array of projects has been undertaken in these provinces to rehabilitate roadways, replace bridges destroyed during the conflict and, in some cases, build new bridges.³ Indeed, in an interview with the consultants, a former head of the Road Development Authority and Member of the National Transport Commission remarked that: "There is hardly anything left to be done in the East except minor roads." With regard to intercity roadways, we concur with that assessment. The most severe intercity and interregional road constraints in the country are due to congestion in its westernmost provinces, and not in Uva, North Central, and the Eastern Provinces.

Mitigating the dual problems of congestion and unsafe roadways will take several years and require a combination of widening existing roadways, developing bypass routes around cities, and building high speed, limited access highways. A revitalized rail system, with taxes and incentives to align better private and social costs could also be part of this strategy.

³ These road projects are funded, primarily, through three sources: 1. World Bank and Asian Development Bank funded road development projects and other assistance 2. bilateral donor grants related to the Tsunami, and 3. bilateral donor grants to assist with recovery from the recent conflict.

Roadways: Security-Related Impediments

As recently as one month ago, military and police checkpoints were severe impediments to the movement of goods and persons. Along some routes, trucks had to go through multiple checkpoints at which they were required to offload their cargos for detailed inspections. Clearing a single checkpoint could take over four hours and the repeated handling of the cargos frequently resulted in damage.

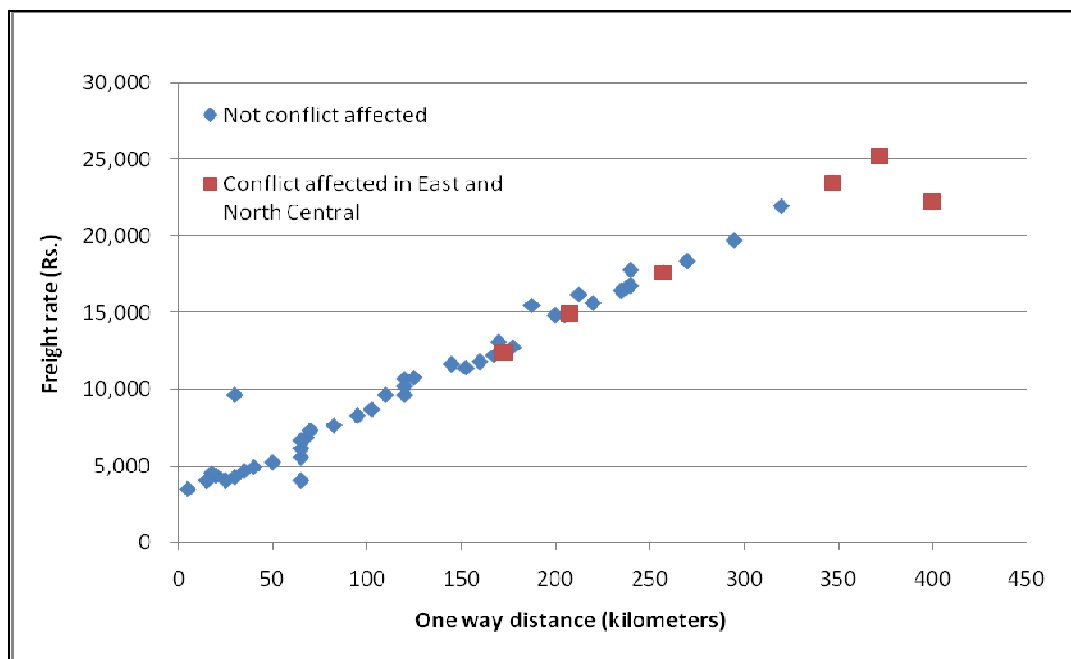
The situation has dramatically improved. On a trip through these provinces, August 8-12, 2009, the consultants observed nearly 30 checkpoints. At the large majority of them either no vehicles or only a small proportion of vehicles were being briefly stopped. At three checkpoints, the loads for some trucks were being inspected. Our understanding is that inspections are carried out only when the driver cannot produce the shipping documentation or when there are other reasons for suspicion.⁴ At six checkpoints, passengers from [at least some] buses had to disembark and have their identification checked. There did not appear to be lengthy delays associated with these procedures.

We conclude that security procedures no longer pose significant barriers to movements within the three provinces and between these provinces and the western half of the nation. To confirm this, freight rates were obtained which are currently being paid by a large Colombo-based firm for truckload shipments between Colombo and numerous points throughout Sri Lanka (not including the North). If delays and damage related to checkpoints in the three provinces are significant, it would be expected that freight rates between Colombo and points in the three provinces would be high, relative to freight rates between Colombo and points not affected by the recent conflict. As can be seen in Figure 1, this is not the case. The evidence suggests that security is not an impediment to commerce in the three provinces.

It should be stressed, however, that this situation could reverse if there were a significant terrorist incident. It should also be noted that movements into and from the North are still highly constrained by security procedures and regulations.

⁴ Permits are still required for travel into the Northern Province. We believe that the permit system has been or shortly will be phased out in all other areas.

Figure 1: Freight Rates between Colombo and Various Points, August 2009



Source: Consultants analysis based on market rates obtained from a large shipper.

2.1.2 Railroads

The Sri Lanka Railways (SLR) has 1,640 kilometers of rail lines. Due to the recent conflict, 440 kilometers of these lines are not in operation, see Exhibit 1. In particular, the Mannar Line, which branches off the Main Line near Medawachchiya and proceeds northward to the coast, and the Main Line north of Vavuniya are not operational due to conflict-related damage. These lines are expected to be back in service by 2013⁵.

The extent of the rail network appears to be adequate for the country, with the possible exception of its southeast quadrant. There are no rail lines serving coastal areas between Matara and Batticaloa and the Upcountry Line terminates in Badulla, leaving Monaragala and Ampara without direct rail service. It should be pointed out, however, that much of this part of the country is sparsely populated, with considerable areas devoted to national parks. Moreover, part the gap in the southeast is being closed with the construction of an extension of the Coastal Line to the port of Hambantota. This is expected to be completed by April 2010. Longer term, the SLR has plans for numerous extensions which would expand the system by about a third (not shown in Exhibit 1).

Low utilization rates on the system as a whole, and particularly along some lines, suggests that SLR should consider rationalizing parts of its system in order to concentrate resources on potentially more

⁵ Work on the Mannar to Medawachchiya to Talaimannar line has already been given to Chinese and Indian firms.

viable lines, rather than expanding into areas in which there is little current or near term potential. Such a concentration of effort could accelerate needed track and cross tie (i.e., sleeper) replacements and improvements in signaling and communications. Also, except for the Main Line, from Colombo to Jaffna, much of the system is single, rather than double, track, which greatly reduces capacity and flexibility. This should be corrected, at least along lines judged to be commercially viable.

Exhibit 1: Sri Lanka Railways



2.1.3 Airports

Sri Lanka has 14 airports located throughout the country, including five in the three provinces.⁶ The number and distribution of these airfields appear more than adequate to meet the country's current and medium term domestic, civil aviation needs. Due to the conflict, these airfields were turned over to the Sri Lankan Air Force. The process of returning airports to full or partial civilian control is just beginning. In the East, the two most important airfields are at Ampara and Trincomalee. Within 6 months, it is anticipated that the Sri Lankan Air Force will hand the Ampara Airport back to full civilian control. The Sri Lankan Air Force intends to maintain a presence at the Trincomalee Airport for the foreseeable future. However, the Ministry of Ports and Aviation and the Sri Lankan Air Force have come to an agreement to have dual management. This will include having a completely civilian side of the field. Work on this transition will begin as soon as possible.

The Bandaranaike International Airport (BIA) at Colombo is the nation's only international airport. In recent years, there have been several projects at BIA to upgrade and expand facilities. There is considerable cool room capacity for handling perishables and a third cargo terminal was recently completed. Overall, the service levels for processing freight are satisfactory. Through BIA flows Sri Lanka's most high-valued exports, many of which, such as fish and agricultural products, have strict handling and climate control requirements. Particularly as significant growth in such exports is anticipated, high priority should be placed on ensuring that the highest standards are maintained and that processing capacities increase sufficiently to meet demands.

A complaint of some shippers has been that the small number of airlines serving BIA limits capacity for freight as well as the range of destinations. This situation should improve, markedly, over the coming year. Several airlines, including British Airlines and KLM, have begun discussions with the Ministry of Ports and Aviation about beginning flights into BIA.

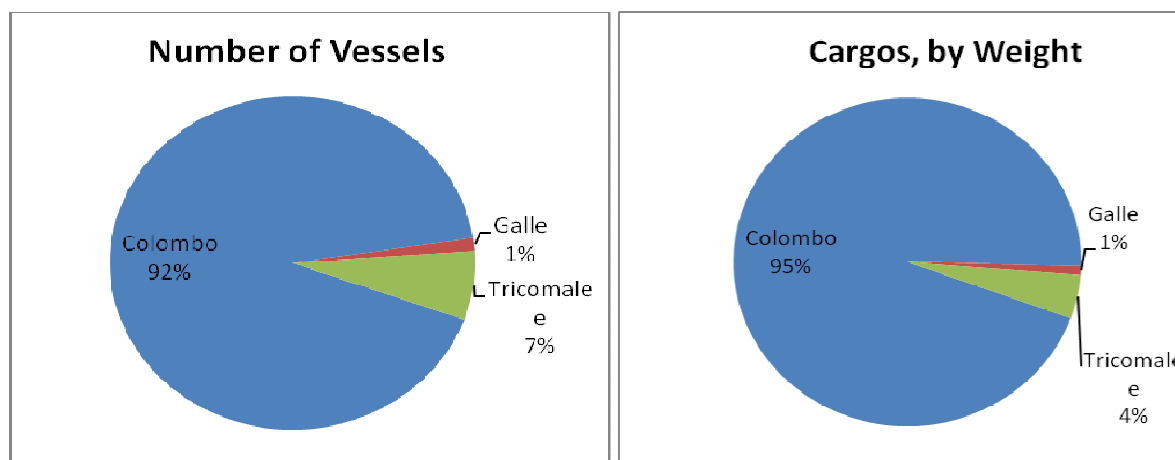
Developing a second international airport would be appropriate to provide redundancy in case of an emergency at Bandaranaike and to support development, including tourism, in other parts of the country. Recognizing these needs, there are plans to develop a second international airport at Hambantota. It is anticipated that this airport will be completed by 2012. It will be linked to Colombo by an extension of the Coastal Rail Line and a six lane expressway, both of which are currently under construction. As the overall economy of the northern and northeastern regions of the country grows, Sri Lanka should consider developing the Trincomalee Airport into the nation's third international airport.

2.1.4 Ports

As is evident from Figure 2, the Port of Colombo is Sri Lanka's dominant port. The 95 percent share for the Port of Colombo regarding cargo weight is particularly impressive considering that the Port of Colombo concentrates, almost exclusively, on container traffic, which requires considerable handling and is of high value relative to most bulk cargos.

⁶ These are located in or near: Trincomalee, Ampara, Batticaloa, Polonnaruwa, and Anuradhapura.

Figure 2: Distribution of Vessels and Cargos Processed Through Sri Lankan Ports, 2008



Source: Central Bank of Sri Lanka Annual Report: 2008

During 2008, new equipment was installed at the Port of Colombo's existing container handling facility, the Jaya Container Terminal. Moreover, additional capacity is being developed for the port through the Colombo Port Expansion Project. Augmenting these efforts, development of a new port at Hambantota is underway. This port will handle some bulk cargos and if and as the Port of Colombo reaches capacity, also handle container traffic. A much smaller scale port development project is planned for the Port of Galle.

In the Eastern Province, the Oluvil Port Project is underway. This project is intended to create a regional port able to handle moderate volumes of freight and support development of the fishing and tourist industries. Elsewhere along the coast there are a series of generally small harbors and open beach landings well-suited for tourism and small-scale fishing typical of the area.

The principal exception is Trincomalee, the second largest natural harbor in the world.⁷ In Trincomalee, Prima Flour and Tokyo Cement have sophisticated, privately owned, facilities to receive and process raw materials and then transport product overland throughout the country. Outside of these facilities, there are a few older vintage cranes for general cargos along a pier which can handle up to four (small or medium size) vessels, and some dilapidated, apparently unused warehouses.

Close to Sampur, across the outer harbor (i.e., Koddiiyar Bay) from Trincomalee, there are plans to construct a large coal-fired power plant and facilities for offloading colliers⁸. This would be a much needed addition to the country's electricity generating capacity and provide employment in the area. However, the plant could reduce, at least to some extent, potentials for developing tourism.

⁷ 'Handimax' and 'Panamax' category ships up to 222 meters in length and 35.5 meters in breadth can be accommodated here. Harbor draught of 13.5 meters is sufficient and can give shelter for about 100 of the larger ships.

⁸ A 500MW Coal Power Plant is to be set up East of Muttur closer to Sampur and 5 km west of Kaddaiparechchen. An agreement is to be signed before the end of 2009 between an Indian company and the Ceylon Electricity Board. The project is scheduled to be completed in 2014.

Another potential for Trincomalee would be increased use as an entry and storage point into the country for crude oil and other petroleum products. In addition to having a very large, deep draft, natural harbor, suitable for tankers, there are nine oil storage tanks, built during World War II to support the Royal Navy. Two of the tanks are controlled by the Indian Oil Company and the remaining seven by the Ceylon Petroleum Corporation. The Indian Oil Company currently uses its two tanks and the Ceylon Petroleum Corporation uses one of its seven tanks. There are no firm plans to use the remaining six tanks. Increasing petroleum imports through Trincomalee would be a boon for the local economy. In addition, transport of these products to other parts of the country could provide much needed business for the SLR. The inner harbor also serves as a berth for approximately 400 fishing boats. It should be noted that there are an estimated 14,000 fishing boats in the inner and outer harbor. Over 90 percent of these are very small craft, suitable only for single day fishing trips.

There are no firm plans regarding future development of Trincomalee. This is understandable, considering: 1. the current focus on developing Colombo, Hambantota, Oluvil, and Galle; 2. uncertainties regarding the extent and duration of military use of port facilities and resulting limitations on civilian use; and 3. the small amount of economic activity in the area. Another reason for uncertainties regarding future development is its location distant from both Sri Lanka's main population centers and major shipping lanes. It seems likely that Trincomalee's most important near term potentials are fishing and tourism. With regard to cargos, despite its considerable physical potential to be one of the world's largest ports, its future is probably as the principle regional harbor for northern and northeastern Sri Lanka, with its growth tied to the growth of that region.

With regard to serving current demands, the single biggest shortfall of all the harbors in the Eastern Province is the near-complete absence of refrigerated storage which would allow fishermen to coordinate the sale of their catches with market demands.⁹

2.1.5 Storage and Collection/Distribution Centers

Throughout the three Provinces, particularly in the Eastern Province, there is a dearth of storage facilities and complete absence of collection/distribution centers. The sole exceptions to this are the dedicated facilities of Prima Flour and Tokyo Cement at Trincomalee. One other commercial organization expressed plans to build a common user storage and distribution centre for around 3,500 pallet positions in Trincomalee, intended for storage of commercial goods that go from Colombo, break-bulk quantities and redistribution in the East. Of particular note, with a few exceptions, primarily for medical supplies, there are no refrigerated storage facilities in the Eastern Province.¹⁰ In addition, the large majority of agricultural producers, even those with storable commodities, such as paddy, do not have any storage facilities. In the rare instances producers store some commodities; they do so in structures not designed for providing proper insulation or protection from pests.

⁹ The Ceylon Fisheries Cooperation, a government agency, has a cold room for its purchases of fish in Trincomalee.

¹⁰ A refrigerated facility is due for completion at the Port of Batticaloa over the next 12 months. There are also approximately a half dozen cool rooms and some ice making capacity, primarily for dairy products or, to a lesser extent, meats.

The paucity of storage forces producers to sell products when they are produced, rather than in accordance with market signals or cash flow needs. Such a system tends to lower net returns to producers and puts strains on the logistical system which reduce efficiency and contribute to product losses. We will argue that this is the most severe shortfall in the logistical system of the three provinces; that rectifying this situation can serve both the immediate and long term development needs of the region and Sri Lanka as a whole; and that government, private sector and donors could make cost-effective, sustainable interventions which would accelerate this process.

Note on the Sri Lankan Paddy Marketing Board and the need for producer-owned storage:

Throughout much of Sri Lanka, including the three Provinces, paddy is the most important crop. The Government of Sri Lanka, through the Paddy Marketing Board (PMB), endeavors to improve farmer returns for their crops and ensure reasonable price stability.¹¹ The primary mechanism for this is Government purchases and storage of a portion of the paddy crop. The PMB has a system of 165 storage units throughout the country¹². Due to damage from the recent conflict, 40 of these are not in service. The PMB endeavors to purchase and store up to 10 percent of the national crop. The PMB prides itself, justifiably, on offering fair prices. The PMB uses its stocks and purchasing power much like a central bank employs its reserves to stabilize currency values. When there are upward pressures on market prices, some of these stocks are sold in the market. When prices fall, the PMB purchases stocks.¹³

The success of this system for stabilizing market prices depends, in part, upon the adequacy of budget allocations to PMB¹⁴ and this agency's ability to time purchases and sales to dampen movements in market prices. In theory, at least, an entity controlling 10 percent of a crop could greatly reduce price movements. The ability of this system to enhance the overall level of prices is much less clear. Because PMB does not hold its stocks indefinitely, the total amount of paddy available in the market is the same as if there were no PMB, albeit with a different time profile.

If farm gate prices closely follow market prices and if the PMB is successful in eliminating significant swings in market prices, there is little need for producer-owned storage. However, these conditions may not hold. Due to budgetary shortfalls or mistimed purchases or sales, PMB may be unable to dampen movements in market prices. More importantly, prices paid by middlemen to farmers having no other alternative but to sell their crops may be at significant discounts from market prices and, indeed, may have little correlation with market prices. For these reasons, even for paddy, producer-owned storage should be considered.

¹¹ In 1996, on the advice of the World Bank and IMF, the Paddy Marketing Board was eliminated. In 2007, the Paddy Marketing Board was reestablished.

¹² Number of PMB stores in project areas; Anuradhapura-29, Ampara-29, Trincomalee-12, Moneragala-6 and Batticaloa-2.

¹³ There are also price controls on rice.

¹⁴ In some years, including the current year (2009), the PMB can purchase only a fraction of its target.

2.2 Overview of Logistics Activities by Private and Public Sector Firms: Performance and Prospects

2.2.1 Motor Carriage

Consistent with prevailing practices in most nations, Sri Lanka's motor carrier industry is entirely private sector driven, and there is no economic regulation.¹⁵ Motor carrier fleets tend to be small. Most fleets are between one and five trucks, with fleets having ten or more trucks being the exception. Many larger firms, such as Hayleys, have their own fleets, but also depend to a large degree on hired carriage.

As would be expected, a wide array of equipment is used, from small, 1.5 ton trucks to modern semis comparable to those found anywhere in the world. For intercity haulage, the majority of the nation's fleet appears to range between 3 and 15 tons gross vehicle weight. In part this reflects the older vintage of much, though not all, of the nation's fleet. In addition, smaller size vehicles are often appropriate for negotiating narrow urban streets, gaining access to over-crowded, constrained facilities, such as the St. John's Fish Market, and serving customers with small or medium size shipments.

Overall, the motor carrier industry appears to be efficient and highly competitive. Logistics personnel from several of Sri Lanka's largest firms indicated that they are able to find reliable carriers in the market which can meet or exceed their standards for equipment quality and performance. Such carriers include very small operations. For example, one shipper uses its own trucks to move ten percent of its products and relies on hired vehicles for the remaining 90 percent. This firm has exacting standards regarding equipment specifications (must be 50 ton gross vehicle weight and in excellent operating condition) and carrier performance. It has a pool of 150 carriers, with a total of 300 trucks, able to meet these standards. The largest of these carriers has 20 trucks, while the large majority of the carriers have between one and three trucks. The firm pays the carriers the equivalent of 105 Rupees per kilometer, one way. The trucks, of course, must make roundtrips, almost never with return loadings. Given waiting times for pickup and delivery and, in particular, delays due to road conditions and congestion, roundtrips average 42 hours. Even considering prevailing wage rates, such performance is impressive. Comparable rate levels were quoted by other shippers, including shippers of fish and agricultural goods.

The very large majority of interregional carriers are based in the western part of the nation. They operate into the three Provinces, according to demand, on a trip-by-trip basis. With the exceptions of Prima Flour and Tokyo Cement, no examples were found of larger firms basing parts of their fleets in the Eastern Province. There are, of course, carriers based in the region for local haulage. Again, these appear to be adequate for current needs. We are confident that as demand in the region for local haulage increases, the industry will be able to meet these needs. Moreover, as production levels increase in the region, particularly as collection/distribution facilities are established, interregional carriers will open branch offices in the region and new interregional carriers based within the region will emerge. Fuel and repair facilities were observed in virtually every community larger than a village in the three Provinces. In addition, and of some surprise, in two communities there were truck dealerships with (small) inventories of new vehicles on display.

¹⁵ Economic regulation refers to government controls over freight rates, entry and exit, types of goods hauled, and areas served.

In summary, we conclude that the motor carrier industry is healthy, responsive, and competitive. Moreover, we conclude that most interregional motor carriers will continue serving the three Provinces from terminals in the western half of the country until the volumes of business there increase.

Note on practices observed regarding the handling of fish and produce:

Poor practices are often employed when moving fish and produce. While these are associated with truck movements, they are, primarily, due to the actions and expectations of shippers and receivers, rather than the motor carriers themselves. In other words, shipper/receivers are, in some cases, demanding the wrong equipment and/or using the equipment improperly. In part this may be due to insufficient knowledge about post harvest handling and/or difficulties securing premiums for higher quality product. The lack of storage options at or near production points can also play a part as shippers may be forced to move unexpectedly large volumes of product even if proper equipment is not available.

In Sri Lanka, there are some refrigerated vehicles, mostly for highly temperature-sensitive products, such as dairy. Ice is employed, primarily, to move fish to market. When using insulated trucks, this practice appears satisfactory. Unfortunately, uninsulated vehicles are also employed. Depending upon weather and traffic conditions, ice in uninsulated trucks may be completely melted before half or even a third of a trip from the east coast to Colombo or Kandy can be completed. In such cases, the potential for product deterioration is evident.¹⁶

All or virtually all produce appears to be shipped in vehicles without the use of refrigeration or ice. Indeed, open trucks are often employed, with the upper layers of produce directly exposed to the elements (in many cases shippers do not even bother to secure tarps (tarpaulin) over their loads). Due to overloading and improper and odd sized containers, crushing frequently occurs in the lower strata of the loads. Proper containers, such as plastic baskets and the use of tarps over loads would help reduce losses considerably. If such practices were combined with water cooling produce immediately after harvest, loss rates from temperature and mechanical damage might be reduced to a tenth of current levels. Again, we believe that the origins of these problems are the shippers and receivers, rather than the carriers.

2.2.2 The Sri Lankan Railways

The SLR is a State owned and operated railway. With the exception of a public-private partnership in which JF Tours maintains and handles charters for the Viceroy Train (a steam locomotive, two passenger cars, and dining car used for tourism), there is virtually no private sector involvement.

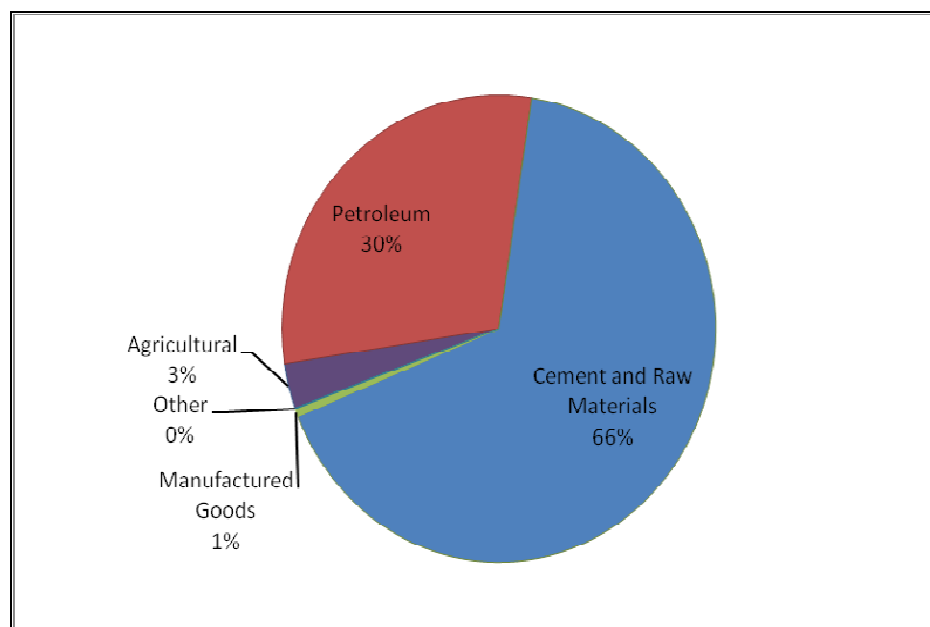
With regard to the three Provinces of interest in this assessment, the SLR provides intercity transport for a modest number of passengers and, from Trincomalee, transports cement. Indeed, Tokyo Cement is the largest single, private sector shipper using the SLR. Until recently, the railroad also transported flour from Trincomalee for Prima Flour.

¹⁶ The use of uninsulated trucks, with ice, can be satisfactory for shorter movements. The problem arises when these vehicles are employed for the much lengthier transits from the East Coast fisheries to Kandy and Colombo.

As a system, the SLR must overcome several challenges if it is to play a significant role in Sri Lanka's economy and to become or, at least, approach financial self-sufficiency. In 2008, the railroad accounted for five percent of intercity passenger movements and barely one percent of intercity freight movements (Central Bank of Sri Lanka). The relative importance of different types of cargos is presented in Figure 3. Compared to the previous year, in 2008 the number of passengers fell just over two percent and goods haulage declined by nearly ten percent.

In 2008, fares were increased for both passengers and cargos. As a result, SLR revenues increased by over 22 percent, while operating costs increased by just under 13 percent. Nevertheless, revenues account for only 44 percent of operating costs and barely 20 percent of operating costs plus capital expenditures. The difference is made up for by government subsidies. Most of the funds for capital expenditures are financed by concessional loans from bilateral donors, primarily China and India.

Figure 3: Distribution of Cargo Carried by the Sri Lanka Railways, by tons, 2008



Source: Sri Lanka Railways

In the face of Sri Lanka's competitive motor carrier industry, the extent to which the SLR can continue to raise revenues through rate increases is severely limited. Based on information from one shipper, along some routes, freight rates offered by motor carriers are lower than those offered by SLR and, on remaining routes, truck freight rates are comparable to or only slightly higher than for the SLR. Given this, it is not surprising that the SLR lost nearly ten percent of its goods haulage in 2008, relative to 2007. In terms of revenues, freight makes a relatively small contribution, see Figure 4.

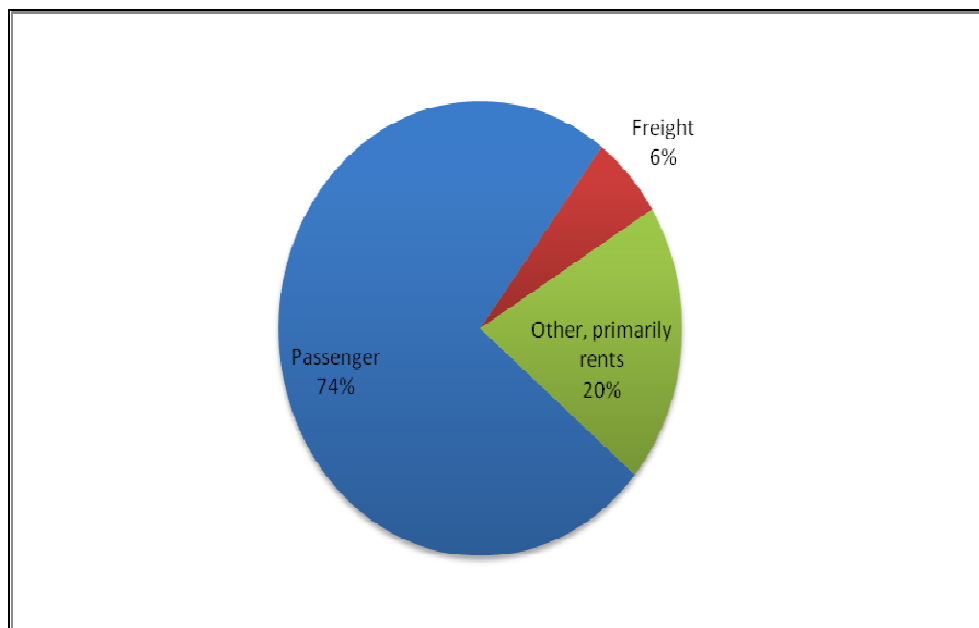
The problems SLR must address are typical for railroads in many developing countries. These include:

- Worn rails and cross ties (i.e., sleepers);
- Rolling stock and locomotives which are aging, in poor repair and/or short supply.

- For example, over three quarters of the SLR's locomotives are more than 30 years old;
- Outmoded communications and signaling; and
- Overly large workforce.¹⁷

Another complication for SLR is that, with the end of the conflict, it must consider strategies for reopening its inoperative lines and adjusting to a likely decline in traffic from the military. In part because of these problems, the quality and reliability of the SLR's services are frequently lower than for available alternatives.

Figure 4: Distribution of Revenue Sources of the Sri Lanka Railways, 2008



Source: Sri Lanka Railways

Commendable efforts are being made to overcome some of the technical problems. SLR has established shops for refurbishing locomotives. In 2008, 15 of SLR's 120 locomotives and power sets were refurbished. With support from the Government of China, SLR imported 100 passenger carriages and 15 power sets. Also, under a loan from the Government of India, the Coastal (Matara) Line is being upgraded. Using Sri Lankan government funding, SLR is double tracking some parts of the system. These measures, however, do not address the overall problem of developing price-service combinations which are both competitive in the marketplace and compensatory for the railroad.

Particularly given the compact size of the country,¹⁸ SLR should not attempt to be a full service railroad along all of its lines. Rather, it needs to develop and implement a long term, strategic plan which

¹⁷ For example, the size of the Malaysian Railroad system is comparable to that for the SLR. The former handles considerably more traffic of all kinds than the SLR. However, the workforce for the Malaysian Railroad is less than half that for the SLR.

¹⁸ Relative to truck and bus transport, trains have a competitive advantage with regard to longer hauls.

identifies specific services it can offer along different parts of its system. In other words, SLR should identify niches in which it can successfully compete. Possibilities for this include:

- Movement of bulk commodities from ports, such as Hambantota, to Colombo;
- Container movements between the Port of Colombo and container yards located 50 to 100 kilometers from Colombo to reduce road congestion in and around Colombo and improve port operations. One of the most surprising gaps in SLR's operations is the total absence of container movements;
- Tourism; and
- Commuter and intercity passenger carriage. Passenger service by railroads which cover all costs is rare anywhere in the world. However, many nations subsidize rail passenger services to reduce congestion and pollution and, in some cases, provide a low cost transportation alternative for the poor. These are valid considerations and could be an important part of SLR's strategic plan. However, both SLR and the Government should accept that: 1. subsidies will be required indefinitely, and 2. even with very low fares, reasonable service levels must be maintained in order to hold ridership.

One of the most important, and painful, requirements in developing a strategic plan is to accept limits on what the railroad can do. This means that, along some lines some types of service will no longer be offered. Indeed, in developing its strategic plan, SLR should be prepared to abandon, at least temporarily, some parts of its system and defer or cancel expansion plans unless they are consistent with the strategic plan.

Above all, regardless of the strategy adopted, there must be total commitment to adhere to sound management practices and to being responsive to market signals. This is extremely difficult for state operated enterprises. As such, SLR should consider options, such as concessions, management contracts, and other forms of public-private partnerships to involve the private sector in more of its functions.

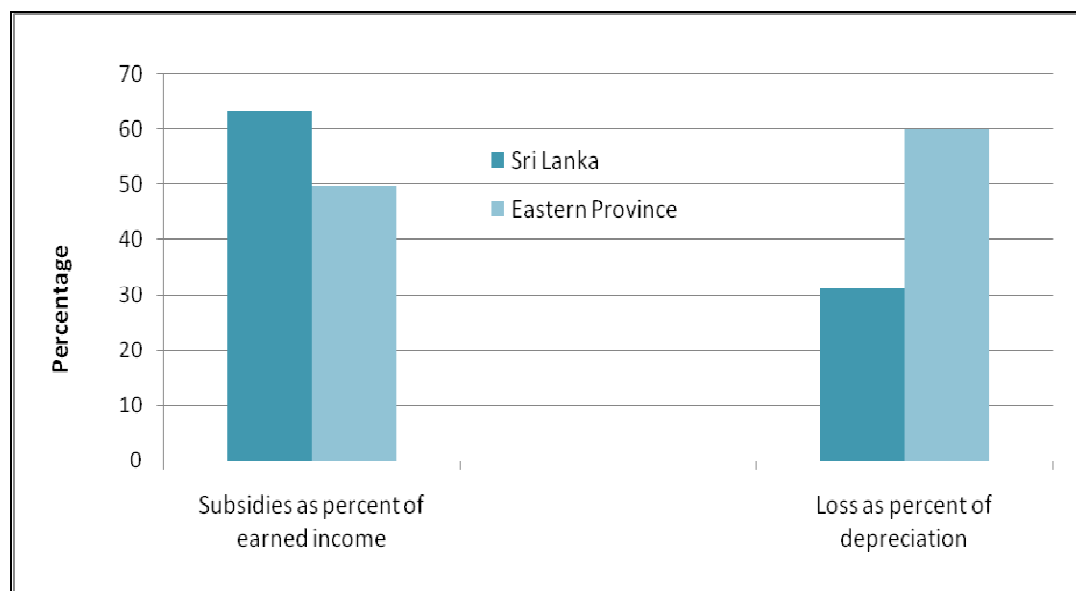
2.2.3 Busing

Sri Lanka has vacillated back and forth between reliance on public or private busing. For many years busing was a state monopoly. Due to deteriorating service, in 1991 the system was entirely privatized. Four years ago, in 2005, a mixed busing system was established, with government and private bus companies competing in the same markets. The government regulates entry, rates, and routes of the private operators.

Reestablishment of state-operated busing, in 2005, appears to have been largely due to a political decision favoring public sector involvement, rather than an overall crisis regarding the services being provided by the private sector. There may have been problems, such as insufficient service during off-peak hours, but these could, potentially, have been dealt with without direct State participation in the sector, for example, through concessions. Indicative that the 2005 return to State-operated busing reflected the then-dominant political philosophy, in that same year the Government reversed ongoing steps to transform the SLR into an independent corporation.

Unlike in many countries, private busing, both intra-city and inter-city, is profitable. Nearly three quarters of all buses in Sri Lanka are private. These firms purchase licenses from the government and pay taxes. No private bus company receives any subsidies. The picture is starkly different with regard to State-operated busing. Simply put, despite very large subsidies, the system is collapsing. Employing data for March 2009, annual subsidies for State-operated busing are on the order of LKR 9,000,000,000 or US\$81,000,000 for the country as a whole.¹⁹ Employing the Eastern Province as an example, annual subsidies to support State-operated busing in that Province are nearly LKR 400,000,000 or US\$3,500,000. As can be seen in Figure 5, the subsidy levels are equivalent to a large share of total earning (the first set of bars). For example, for the Eastern Province subsidies are equivalent to half of earned income. In other words, one in every three Rupees in income for State-owned busing in the Eastern Province are from subsidies. Despite this, State-owned bus companies realize losses for the country as a whole and in every province.

Figure 5: Financial Sustainability Indicators for Sri Lankan Public Bus System March 2009



Source: Based on Sri Lanka Transport Board financial statement for March 2009.

The second set of bars in Figure 5 above shows the losses in March 2009 for the entire system and for the Eastern Province as percentages of depreciation. This is an index of the extent to which these firms are surviving by “eating their capital.” The physical manifestation of that reality is presented in Figure 6. For the nation as a whole and for the Eastern Province, over 40 percent of the buses in State-owned firms are not operating and, in that one month (i.e., March 2009), 8 percent were scrapped.²⁰ Without radical changes, the outcome is obvious, regrettable, and not in the distant future.

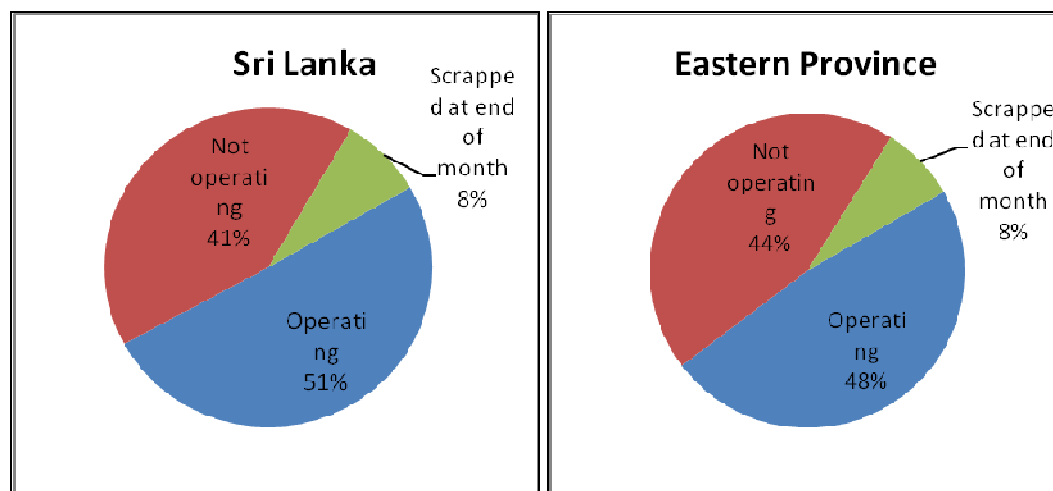
Particularly given that private busing already handles the large bulk of Sri Lanka’s needs, it might be appropriate to consider other means for the Government to ensure consistent service. For example, to

¹⁹ Subsidies here include the “Treasury Subsidy,” as well as support to purchase inputs, pay wages, etc.

²⁰ It seems likely that many of the buses not being operated are already being cannibalized for parts.

address service during off-peak periods, a concession system might be employed. Given the more fluid situation and imperatives for development in the areas affected by the recent conflict, the Sri Lankan and provincial governments may be open to considering such options.

Figure 6: Disposition of Buses for State-owned Busing Companies- Sri Lanka and Eastern Province, March 2009



Source: Based on Sri Lanka Transport Board financial statement for March 2009.

2.2.4 Civil Aviation

Civilian flights are allowed into most airports across Sri Lanka. Indeed, Expo Airlines and Deccan Aviation Lanka have regularly scheduled service to Jaffna. At the time of this writing, the only airport in or near the three Provinces of interest in this assessment which is closed to civilian flights is Vavuniya. Airlines must submit applications to the civil aviation authorities which, in turn, pass the documents onto the Sri Lankan Air Force for their approval. Private operators report that this process is, in most instances, straightforward.

The Sri Lankan Air Force flies civilians, using helicopters and fixed wing aircraft. These services are marketed through its travel agency, Heli Tours. The general consensus among private operators is that Heli Tours is not a serious competitive threat and, in some cases, provides services which could not be provided by the private sector due to lack of equipment or on-the-ground support facilities, equipment, and personnel. According to the Ministry of Ports and Aviation, both they (i.e., the Ministry) and the Sri Lankan Air Force view Air Force flights for civilian passengers as a stop gap measure, which will be phased out as soon as private sector carriers can provide sufficient services. This transition should be encouraged.

2.2.5 Maritime

Aside from deliveries to Prima Flour and Tokyo Cement at Trincomalee and limited coastal shipping, the primary, near-term, maritime activities and opportunities on the East Coast are fishing and tourism. In July prohibitions on movements by civilian craft were lifted. This is opening up opportunities for fishing and tourism. Both of these are potential areas for interventions by government and private sector donors. These are addressed in USAID/CORE's assessments of those two sectors.

As noted earlier, plans are as yet unclear regarding development of Trincomalee. It is likely that Trincomalee will develop at a moderate pace as the primary regional port for most of northern and northeastern Sri Lanka. Some of those interviewed have expressed the view that coastal shipping will expand along the East Coast, including in the North. While we concur that there will be some expansion of coastal shipping, as the local economies recover, its potential is very limited.

2.3 Government Agencies, Donors, NGOs, and Professional Agencies Involved in Logistics

A partial list of government agencies, donors and other organizations involved in logistics in Sri Lanka is presented in Appendix 2.

3. Analysis of the Sector

In this section the report briefly discusses the findings which are most relevant to the suggestions made for potential interventions by government and private sector donors.

3.1 Low Population Density, Low Production Levels, and Significant Distance to Markets in Western Sri Lanka and International Ports/Airport

The Eastern, Uva, and the North Central Provinces account for 44 percent of Sri Lanka's land mass but only 20 percent of its population. Relative to western Sri Lanka, income and production levels are very low. These three Provinces combined probably account for little more than ten percent of Sri Lanka's GDP. Under such circumstances, it is not surprising that virtually all interregional motor carriers are located in western Sri Lanka. Pickups and deliveries in the region, particularly for the Eastern Province, are handled on a trip-by-trip basis. With the exceptions of Prima Flour and Tokyo Cement, there are no collection/distribution facilities or modern warehouses in the Eastern Province.

As the region recovers from the recent conflict, existing long distance trucking firms will open branch offices in the region and new carriers will arise within the region. To accelerate this process, as well as to promote establishment and expansion of intraregional motor carriage, the establishment of warehouses and collection/distribution centers should be encouraged. Such facilities would also expand marketing alternatives for local producers. In particular, storage capabilities would reduce the degree to which local producers are forced to sell products at the time of production regardless of prevailing market prices and the spread between market prices and prices offered to producers by middlemen.

Taking a broader and longer run view, Sri Lanka's logistics system is highly concentrated in and around Colombo. This concentration has served Sri Lanka well in the past, but, if unchanged, will lower development potentials. As the country continues to grow, it would be advantageous to develop alternatives or satellite production and logistics centers to reduce unnecessarily lengthy movements and relieve congestion. Developing storage and collection/distribution facilities in the eastern part of the island would be consistent with such a transformation.

Dearth of storage and collection/distribution centers: In the Eastern Province, there are virtually no modern warehouses or collection/distribution facilities. Encouraging the establishment of such facilities would contribute to development of the region and the country as a whole in several regards:

- Allow longer distance carriers to focus on line haul (i.e., longer distance, point to point movements), rather than local collection and distribution;
- Promote development and expansion of intraregional motor carriage to carry out the collection and distribution functions;
- Improve marketing options for local producers; and
- Contribute to decentralizing Sri Lanka's logistical system.

Larger firms, such as Cargills, Hayleys, and Keells, will develop such facilities as they expand operations into the region. Without donor or other involvement, however, lack of storage will continue to seriously disadvantage smaller producers. There is an opportunity for donors to provide expertise and access to credit to enable selected producer groups or independent small businesses to obtain such facilities. Of equal or greater importance, interventions should disseminate knowledge about how storage facilities can be employed to improve overall returns and smooth cash flows.

3.2 Policy Constraints and Opportunities

Security Checks: As recently as July, security checks of cargos and passengers along roadways in the East constituted a severe impediment to commerce. That is no longer the case. While there still are numerous police and military checkpoints throughout the region, delays normally are minimal. It should be noted, however, that this situation could reverse if there were a serious terrorist incident.

Commitment to restoring road system: Most bridges destroyed during the conflict and the Tsunami have been replaced. By the end of 2009, all bridges will have been replaced and some additional ones constructed. Likewise, virtually all primary roadways have been upgraded and work is proceeding on many secondary and tertiary roadways. These improvements in the road system, combined with reduced scrutiny at checkpoints, is rapidly transforming the Eastern Province from being one of the slowest, most difficult areas of Sri Lanka for road transport into one of the fastest and easiest.

Government openness to non-traditional approaches to promote development in the Eastern Province: Much to its credit, the Government of Sri Lanka recognizes the importance of economic development in areas affected by the recent conflict and the Tsunami. Because of this, they may be open to considering approaches which might be considered too experimental or contrary to prevailing practices in other parts of the country. In particular, the Government may be open to considering approaches which involve the private sector to greater degrees than is typically the case elsewhere.

4. Strategy Options and Sector Development in the Eastern, Uva, and North Central Provinces – High Level Overview

4.1 Likely Private Sector Activity in the Near Future

Tokyo Cement and Prima Flour: Two of the largest firms in the region are Tokyo Cement and Prima Flour. It is expected that these firms will continue to be based in Trincomalee. It is also expected that Tokyo Cement will follow Prima's example of shifting all of their overland movements from rail to trucks.

John Keells and Cargill: John Keells and Cargills operate the two most important grocery chains in Sri Lanka, Keells Super (45 outlets) and Food City (130 outlets), respectively. To serve these stores, they have sophisticated collection/distribution centers and fleets of company-owned and hired trucks. Both firms endeavor to source produce, other agricultural products, and fish directly from the producers. As these firms, and others like them, expand operations into the region, they will improve producer links with the market and set higher standards for logistics.

Aviation, Busing, and Tourism: With the ending of the conflict and a more relaxed security setting, there will be more travel between the region and the rest of Sri Lanka. Tourists, both domestic and international, will be an important part of this growth. At the current time, no airline has regular flights into the region; though some, such as Expo Air, serve the region on a charter basis (Expo Air and Deccan Aviation Lanka have regularly scheduled flights to Jaffna). Through Heli Tours, the Sri Lankan Air Force also transports civilian passengers into and out of the region.

As demand grows, airlines will reestablish scheduled flights into the region. The pace of these developments will be accelerated and their impacts on local economies heightened with the full or partial transfers of airports back to civilian control. As tourism grows in the region, so will demand for local transport. This could include regionally-based bus services.

Interregional Motor Carriers and operators of Collection/Distribution Facilities: At the current time all or virtually all interregional motor carriers, including package services such as DHL, either do not operate in the region whatsoever or serve it on a trip-by-trip basis, with no permanent facilities in the region. An example of this is Hayleys/Advantis. As the region grows, this will change, though the process may take several years. The importance of this should not be overstated. As long as the region is served adequately by interregional motor carriers, where they are based is of secondary importance.

There is probably too little economic activity at the current time and in the near term to justify establishment of any but the smallest scale collection/distribution facilities to handle haulage for hire. Rather, this type of technology will be introduced through firms handling many different types of their own freight, such as supermarket chains.

The first of the smaller collection/distribution facilities will probably be handled through own-product storage and distribution needs of medium size firms or associations of small firms, including associations

of growers and fishermen. In addition to the marketing advantages from such storage, the advantages regarding transport could be considerable. For example, in the interview with Hayleys/Advantis, they indicated that their trucks, including refrigerated trucks, deliver goods into the Northern Province. They would welcome opportunities to detour into the Eastern Province to acquire loads for return hauls to Colombo. However, Hayleys/Advantis has found it difficult to locate shippers with sufficiently large loads to justify such diversions.

4.2 Significant Government and Donor Activity in the Region

Sri Lankan Government and Bilateral and Multilateral donor activities have been concentrated, primarily, on restoring and, in some cases, upgrading the road system. Because of the Tsunami and the recent conflict, many roadways had deteriorated severely and bridges had been destroyed. Work is also beginning on restoring the SLR's Mannar Line and northern portions of the Main Line. The other significant, ongoing work in the region is development of the port facilities at Oluvil.

Over the next 6 months, it is likely that the Ministry of Ports and Aviation will commence projects to upgrade facilities at the airports in Ampara and Trincomalee to accommodate better tourists and other civilian passengers. As a result of the recent conflict, 40 of the Paddy Marketing Board's storage facilities are damaged or destroyed. As funds become available, these will be repaired or rebuilt.

There have been relatively few activities by NGOs focusing specifically on logistics. In one program, GTZ gave two refrigerated trucks and two smaller trucks to a fishing association in Pottuvil. The results have been disappointing, with the vehicles being idle three quarters of the time and never employed for the tasks envisioned by GTZ. Likely reasons for this include: internal problems in that association; few, if any, firm conditions associated with the grant; and, possibly, insufficient follow-up by the donor. Several other NGOs, such as Stromme, the Team of Youth for Development, Understanding, and Progress (TYDUP) Foundation, and the Rajarata Community Center are exploring possibilities for communal storage facilities. None, however, have actually begun work on such a project.

4.3 Summary of Areas Recommended for Donor Interventions, Policy Changes, or Further Investigation

In this subsection, potential areas already identified in this report, for potential actions by the Sri Lankan Government, donors, or NGOs are briefly listed. Many of the following relate to the country as a whole, rather than just the Eastern, North Central, and Uva Provinces.

4.3.1 Roadways

- Place higher priority on adding shoulders and periodic passing lanes on existing two lane roadways. At least initially, cost can be reduced by only adding shoulders and passing lanes where the topography is favorable and there are no intruding structures or contested rights of way.
- Investigate possibilities for improving the system of taxes and incentives to align better social costs and private user costs. This can include taxes and fees related to congestion, damage to

roadways, and pollution, as well as positive incentives to use less damaging modes, such as busing and rail.

4.3.2 Railroad

- Develop and implement a strategic plan which identifies a small set of niches in which the railroad can have competitive advantages and reduces or eliminates other activities. As part of this, temporary or permanent abandonment of some parts of the system should be considered.
- Explore approaches for greater private sector involvement.

4.3.3 Busing

- Action is necessary to avert collapse of the State-owned busing system. Approaches which include more private sector involvement should be considered.

4.3.4 Storage and Collection/Distribution Centers

- The development of such facilities in the eastern and northern parts of the country should be encouraged.
- Knowledge about the benefits of storage facilities should be communicated to small agriculturalists and fishermen.
- Training programs could be established to ensure that the local labor force has the necessary skills for operating these facilities.

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5. Strategy for USAID/CORE – Lower Level View of Promising Interventions

5.1 Overview

Given the low population density and low levels of economic activities common throughout the region, it is not surprising that many aspects of the logistics system are, in essence, end-of-the-line extensions of activities based in the western part of the country. In particular, virtually all interregional motor carriers and collection/distribution networks are based outside of the region. The near term problem is assuring that the logistics system supports ongoing activities, recovery, and the beginnings of real economic growth. In the longer term, the logistical system should acquire the physical and human capital necessary to support advancement of the region's economy to higher levels.

From the standpoint of identifying promising interventions for USAID/CORE, timing and scale are crucial. Timing is important in two regards. First, developments should not be supported which are too early to be sustainable. Second, USAID/CORE may find it difficult to support activities which will require several years of support. Scale is important for the obvious reason that interventions should not require support levels beyond USAID/CORE's budgetary constraints. A desirable characteristic for an intervention regarding logistics would be to have it support activities which complement the other sectors identified by USAID/CORE as being of special interest.

5.2 Intervention Options

At the current juncture, it is believed that there are no promising opportunities for interventions by USAID/CORE regarding the following: Rail, Civil Aviation, and Commercial Shipping and Ports. In addition, direct interventions to support directly Motor Carriage are not recommended. The following three areas are recommended as areas for interventions. They are presented in order of importance.

Storage and Collection/Distribution Centers:

The most promising area for intervention is support for the establishment or expansion of storage and collection/distribution facilities. As has been argued in this report, the acquisition of storage facilities by small producers (both fishermen and agriculturalists) would greatly increase their marketing options. They would be in better positions to judge the value of offers from middlemen and to sell products at times when they believe prices are higher and/or in accordance with their cash flow needs.

While small scale storage facilities could revolutionize the lives of the producers directly affected. Projects in partnership with larger companies with a presence in the region could have widespread impacts on the region's economy; lead to additional activities, such as food processing; and introduce the region to more advanced logistical technologies. USAID/CORE should consider intervention at both of these levels.

Information and Training:

There may be opportunities for interventions which improve knowledge about storage and other product preservation strategies and interventions which contribute to training individuals for skills related to warehousing.

Reform of State-Owned Busing:

USAID/CORE might consider a small study to explore possibilities for all or selected areas in the Eastern Province to be used as a test case for increased private sector involvement. The arguments in favor of this are:

- Changes in the level and structure of demands for bus services might be better met through private sector involvement.
- This experiment, if successful and replicated elsewhere in Sri Lanka, could have widespread, positive impacts on millions of riders and reduce burdens on government budgets.
- The Government of Sri Lanka may be open to such an experiment to stimulate investment and development in conflict affected areas.
- Without some type of action, State-owned busing companies will continue their rapid deterioration.
- The study, itself, might be a catalyst for discussions about greater private sector involvement in other areas, both within and outside transportation.

The reason for the lower priority on this is the Sri Lanka-wide nature of the issue and the potential for the project being politically controversial. An alternative strategy might be for USAID/CORE to encourage World Bank and/or IMF to address this issue.

5.3 Specific Recommendations

Storage and Collection/Distribution Centers – Large Scale:

Cargill's/Food City already has four outlets in the region, in addition to one in the Northern Province: Anuradhapura, Batticaloa, Trincomalee, Ampara, and Jaffna. Food City's system for sourcing produce and some other agricultural products is as follows:

1. Seven collection centers are located in production areas. Their policy is to deal directly with producers, where possible. They are instituting programs in which they offer free technical advice and sell seed and fertilizer at cost. Crops are not used as security in these transactions and, therefore, growers are at liberty to sell their products to any buyer.
2. Approximately half of the product sourced at each center is shipped directly to retail outlets and the balance to the central collection/distribution center near Colombo, as well as to Cargill's food processing facilities.
3. From the central collection/distribution center product is sent to retail outlets. Some of this product is processed before shipping.

Before the end of 2009, Cargills/Food City will open its eighth collection point in Batticaloa. By early spring 2010, a cool room and a freezer room will be added so that the same facility can be used for sourcing fish, dairy, and some other products. Cargills/Food City anticipates that the Batticaloa center will be one of its most important collection centers. There are also possibilities for adding facilities for processing juices and some other food products. It is difficult to overstate the importance of this development in terms of new employment, business for local producers and firms offering auxiliary services, and to set an example.

At the current time, Keells Super does not have any outlets in the region. Indeed, all but 5 of their 45 outlets are located in the Western Province and most functions are handled out of a single collection/distribution facility. However, Keells Super intends to move into the region as quickly as possible, with Batticaloa, Trincomalee, and Jaffna targeted for the first outlets.

Virtually all of the above statements regarding Cargills/Food City also apply for Keells Super. The only difference is that developments with Keells Super will likely be somewhat slower in coming than for Cargills/Food City, at least in the near term. USAID/CORE should investigate if there are possibilities for interventions which could accelerate the speed or overall impacts of the planned collection/distribution centers and ancillary activities (such as food processing) by Cargills/Food City and Keells Super in the Batticaloa area. Ideally such an intervention would:

- Benefit both Cargill/Food City and Keells Super;
- Have smaller firms as the direct beneficiaries; and
- Be sustainable.

Possibilities for such interventions include:

- Training or other support to local carriers to bring their equipment and training up to standards required for local haulage to and from the centers;
- Support to create satellite holding facilities for growers and/or fishermen; and
- Support to create facilities for immediate post-catch and post-harvest handling to enable growers and/or fishermen to meet standards set by Cargills/Food City and Keells Super. This could include on-board ice storage or ice making machines, facilities for washing and water cooling produce, small in- or near-field packing facilities, and better containers for moving products, such as plastic baskets.

It is suggested that USAID/CORE meet, both singly and jointly, with representatives from Keells Super and Cargills/Food City to explore these possibilities.

Storage and Collection/Distribution Centers – Small Scale:

Interventions should be considered to facilitate the acquisition of storage facilities by growers and fishermen. To convey the income enhancement potential of producer-controlled storage, an example is presented regarding the most important crop in the region, paddy.

As might be expected, the storage facilities maintained by the PMB are quite large, typically 7,200 to 14,000 square feet of floor space and 38 foot height to the eaves. Such facilities would be too large and/or financially too risky for most groups of small producers, at least until they become accustomed to the use of storage.

After conversations with producer groups and NGOs working with growers, we determined that 4,000 square feet was the smallest commercially feasible size. We also adopted the more modest eave height of 25 feet. Having the eave height less than two thirds of the Paddy Marketing Board standard significantly reduces the amount of paddy which can be stored per square foot. However, we believed that this would be more prudent, at least until a producer group gains experience with high stacks of bags.

To maximize storage capacity, aisles sufficient for men and non-motorized equipment, such as hand trucks, were planned for, rather than the very wide aisles in Paddy Marketing Board storage units to accommodate trucks actually driving into and through the facilities. Finally, unlike the Paddy Marketing Board facilities, which are at or near ground level, we planned a facility on a 3.5 foot concrete platform, the height of the most commonly used truck beds. This added significantly to cost, but has the following advantages over ground level units:

- Easier loading and offloading;
- Protection from flooding; and
- Some protection from pests.

Allowing for necessary internal aisles, two feet of clearance between the stored product and external walls, and sufficient airspace above the stored product, we estimate such a facility could hold 302.4 metric tons of paddy (in 50 kg. bags). To put this volume into perspective, yields around Ampara are among the highest in Sri Lanka, averaging between 5,000 and 6,000 kilograms per hectare per crop. Assuming 5,500 kilograms per hectare, the planned storage facility could hold the equivalent of 55 hectares of production from one crop.

The differences between the Paddy Marketing Board facilities and the model designed by CORE for producer groups are summarized in Table 1.

Table 1: Comparison of Paddy Storage Facility Designs

	Small Producer Association ¹	Paddy Marketing Board ²
Square footage	4,000 sq. feet	7,200 sq. feet
Floor height	3.5 feet	0 feet
Eave (or wall) height	25 feet	38 feet
Width of internal aisles	6 feet	12 feet
Space allowed between product and external walls	2 feet	2 feet
Product handling system	Trucks back up to loading docks and product moved within the facility using non-motorized moving equipment and manual labor.	Trucks drive into the facility and product moved within the facility using non-motorized moving equipment and manual labor.
Capacity	302.4 metric tons	1,000 metric tons

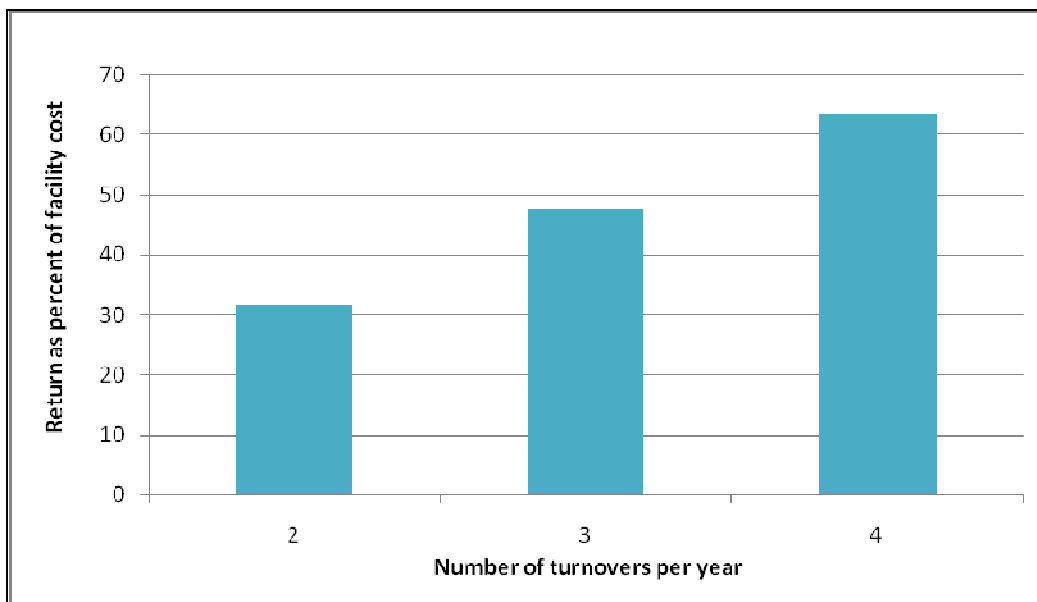
Notes: 1. As designed by CORE in consultation with producer groups.

2. Some Paddy Marketing Board facilities are twice this size.

The estimated cost of the facility is LKR9,520,000 or about US\$84,000.²¹ If producers could use the storage facility to obtain LKR 5 more per kilogram and assuming that product in the facility is turned over only twice annually, the annual return would be equivalent to 32 percent of the cost of the facility. Employing the same, very conservative, assumptions, to realize a return equivalent to 10 percent of facility cost, an increase per kilogram of only LKR1.42 would have to be realized. In practice, almost certainly higher turnover rates would be achieved. As can be seen in Figures 7 and 8, with higher turnover rates, returns from a LKR5 price enhancement rise sharply and the necessary price enhancement to realize a 10 percent return falls to very low levels.

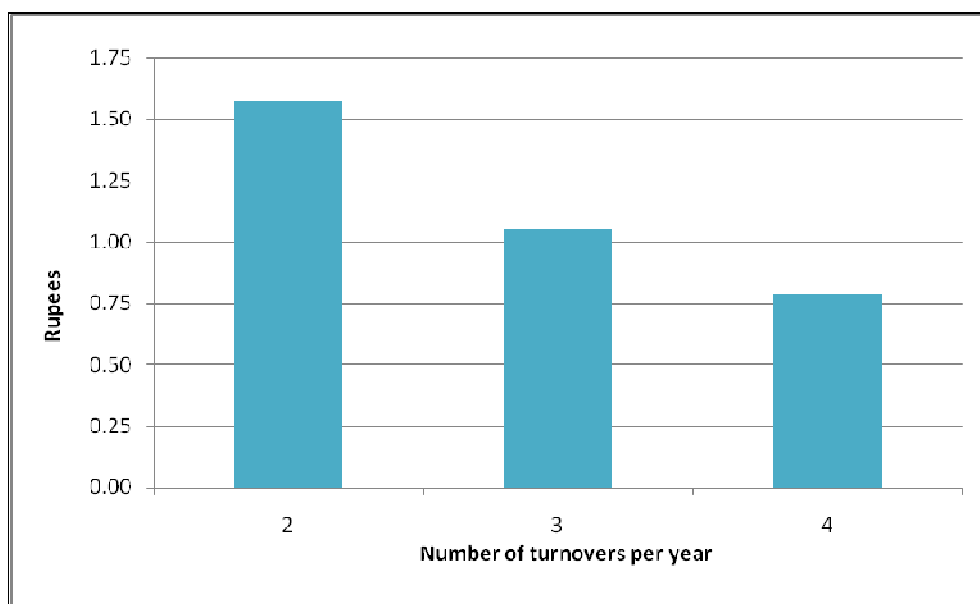
²¹ The estimate was prepared by Elemtech Engineering of Colombo. The estimate did not include any costs from constructing the facility at a remote location. We believed that this was proper given potentials to construct the foundation and platform or even the entire structure using local contractors.

Figure 7: Annual return as percent of facility cost assuming LKR 5 rises per kilogram of paddy stored



Source: Consultants calculations based on cost and capacity assumptions of storehouse described above.

Figure 8: LKR rise per kilogram of paddy stored necessary to realize a 10% return as percent of facility cost



Source: Consultants calculations based on cost and capacity assumptions of storehouse described above.

Is this realistic? We believe so for the following reasons. First, a LKR 5 increase in earnings is modest relative to market prices and the sharp discount from market price often received by producers with no option but to sell. The current market price of paddy is around LKR 34 per kilogram. In the course of our discussions, we heard stories of producers receiving half or less of the prevailing market price. Second, in addition to being better able to bargain for higher prices from middlemen at any point in time, the storage facility would allow producers to delay sales until market prices were higher. Third, at the very least a storage facility would improve the ability of producers to arrange transport to a miller, rather than selling the product at the farm gate. Paddy delivered to a miller normally receives LKR 2 to 3 per kilogram more than if the miller must do the haulage.

Two additional points should be made about impact of having a storage facility for producers:

1. In addition to price enhancements achievable from actually storing product, a producer has a stronger bargaining position regarding all of his product, even if it never actually is stored, if the buyer knows or believes that the producer has the option of storage.
2. Having the alternative of storage gives producers strong incentives to become more sophisticated regarding marketing.

Similar calculations could be made with regard to cool rooms and ice production for some produce and, for fishermen, ice production, cool rooms and freezer rooms. Such calculations are not presented in this report. However, in Appendix 3, cost estimates for small cool rooms and ice making equipment are presented

Information about storage technologies and uses:

The preeminent supplier of ice making plants, cool rooms, and freezer rooms in Sri Lanka is Iceman Technologies (Pvt) Ltd. Iceman has installed nearly three quarters of all cool rooms and freezer rooms in Sri Lanka.

In September 2009, Iceman Technologies will be put on a program targeting fishermen in Jaffna. The goals of the program were to make fishermen aware of:

- Existing technologies for chiller and freezer rooms.
Particular focus was placed on describing small scale facilities suitable for moderate sized fishing associations. Economies from moving to larger units were also discussed.
- Potential uses of chiller and freezer rooms for holding fish.
When one should be used, rather than the other, depends upon the anticipated amount of time fish will be held and other factors.
- Technologies for making ice (both block and flake), including techniques which allow the use of seawater.
This will include how to use ice for short term cold storage, both on land and at sea. Also, equipment for producing ice onboard larger fishing vessels was demonstrated.

USAID/CORE might consider assessing the above program and based upon findings, invite Iceman Technologies to conduct similar workshops, with follow ups, for fishing communities along the East Coast.

Training:

As storage and, in particular, collection/distribution facilities develop, there will be needs for skilled laborers. USAID/CORE might consider supporting efforts to deliver such training. Naturally, for such an effort to be effective, it is crucial to determine the specific types of skills which are or soon will be in demand, the best venues for training sessions, and appropriate follow up programs.

Reforming Public Sector Busing:

USAID/CORE might consider funding a small study investigating options for reforming Sri Lanka's public sector bus system. Given CORE's regional emphasis, this could focus on one or more of the target Provinces. To better ensure the study's relevance and acceptance by Sri Lankan society, the study should be conducted by professionals in the country. A likely source for this is the Chartered Institute of Logistics and Transport.

As noted earlier in this report, a study on the bus system could be very important for the country, but, also could be politically controversial. If there were support in the Government for a study focusing on the target Provinces, it should be strongly considered by USAID/CORE. If not, USAID should consider raising the issue with World Bank and/or IMF.

APPENDICES

Appendix 1: Chronological list of meetings

Duncan Dissanayake, Executive Director, Sri Lankan Association of Freight Forwarders and representative for SLFFA Cargo Services, LTD
Colombo

Virgilio Rodel, General Manager, and Samudra Hewawickrama, Financial Director, Dole Lanka (PVT) LTD
Colombo

R. Suthakaran, Project Officer, United Nations Office for Project Services
Ampara

Mr. Kumar, Officer, OFTAP (local NGO focusing on women and doing micro lending and a project on coconut shell processing)
Tirrukkovil

Mr. Gangadaran, Director, Divisional Agricultural Farmers' Company LTD
Tirrukkovil

Mr. Alliya, President, Fisheries Cooperative Society
Pottuvil

Mr. Adam Bawa, President, Pottuvil Divisional Fishermans' Cooperative Society, Limited
Pottuvil

Mr. Sinnathamby Spirithayon, Director, Eastern Self Reliant Community Awakening Organization
Batticaloa

Mr. Chatsy, Storekeeper, Tokyo Cement
Batticaloa

Pastor Joseph and others, Eastern Technical Institute
Batticaloa

Mr. Prabakaran, Director of Logistics, Tokyo Cement
Trincomalee

Mr. Philip Murugiah, Mission Director, TYDUP Foundation
Trincomalee

Mr. W. Nimal Jayatissa, Resident Manager, Trincomalee Ports
Trincomalee

USAID/CORE Assessment of Logistics in Sri Lanka's Eastern North Central and Uva Provinces

Mrs. Sheela Ratnayake, Executive Director, Rajarata Community Center, PLC
Kekirawa

Mr. Saliya Senanayake, Ceyline Group Director and Chairman of the Chartered Institute of Logistics & Transport
Colombo

Mr. Tilak Collure, Secretary of the Ministry of Transport
Colombo

Mr. Faiz-ur Rahman, Management Board member, Capitol AEI, Limited; Chairman, K. Darwin & Company; Chairman, Kara Steel Mills, Limited; Chairman, Bridges Worldwide, Limited; Chairman, Hill Street Academy
Colombo

Captain Lasitha Cumaratunga, Group Management Committee, Haleys, Advantis
Colombo

Mr. Ravi Shankar, Advisor for Research, Monitoring, and Evaluation, Strømme Foundation
Colombo

Mr. Hemasira Fernando, President, J.F. Tours and President National Olympic Committee of Sri Lanka
Colombo

Mr. Romesh David, President Transportation Group, John Keells Holding PLC
Colombo

Mr. Nawez Rajabdeen, Vice President of South Asian Association for Regional Cooperation; Past President of Federation of Chamber of Commerce of Industry; Director of Export Development Board; National Director for UN Industrial Development Organization
Colombo

Mr. R. Philip, Director, TYUP Foundation
Colombo

Mr. Dudley Fernando, Elemech Engineering
Colombo

Mr. Seraj Mohamed, Director, Expo Aviation
Colombo

Mrs. Ramya Perera, General Manager, Mr. Keerthi De Silva, Director, and Mr. Lakmal Ferdinand, Head of Aerospace Division, Infotechs Limited
Colombo

Mrs. Roshanie Jayasundera-Moraes, Executive Vice President and Retail Sector Head, John Keells Holding PLC
Colombo

Mr. Prasanth Abeykoon, Chairman, and H. A. Premaratne, Director, Management Frontiers
Colombo

Mr. Vajira Perera, General Manager, Sri Lankan Paddy Marketing Board
Colombo

Mr. A.R.M. Abeyratna Banda, Director, Merchant Shipping, Ministry of Ports and Aviation
Colombo

Mr. Keerthi Goonasekara, Manager, Value Added Products & Agri Processing Unit, Cargills (Ceylon) PLC
Colombo

Mr. Dilhan Perera, Director, Iceman Technologies
Kandana

Mr. S. W. Munasinghe, Director of Planning, Sri Lankan Railways
Colombo

Mr. M. A. Jeffrey, Director General, National Transport Commission
Colombo

Mr. G. S. Withanage, Additional Secretary (Aviation), Ministry of Ports and Aviation
Colombo

Appendix 2: Partial Listing of Government Agencies, Donors, and Other Organizations Involved with Logistics

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Roadways and Motor Carriage
Sri Lankan Government	<ul style="list-style-type: none"> • Ministry of Transport • National Transport Commission (NTC) • Road Development Authority under Ministry of Highways & Road Development • Registrar of Motor Vehicles (RMV) under Department of Motor Traffic • Ministry of Finance & Planning, • Ministry of External Resources & Public Administration
Provisional Governments	<ul style="list-style-type: none"> • Eastern, North Central, and Uva Provincial Councils • In Eastern Province, also: Ministry of Road Development, Irrigation, Housing and Construction, Rural Electrification and Water Supply.
NGOs	<ul style="list-style-type: none"> • Ceylon German Technical Training Institute
Bilateral Donors	<ul style="list-style-type: none"> • European Union • Spain • Austria • United States • Japan • Kuwait
INGOs	<ul style="list-style-type: none"> • World Bank • Asian Development Bank (ADB)
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL)

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Busing
Sri Lankan Government	<ul style="list-style-type: none"> • Ministry of Transport • National Transport Commission (NTC) • Sri Lanka Transport Board (SLCTB) • Registrar of Motor Vehicles under Department of Motor Traffic • Ministries of Finance & Planning, External Resources & Public Administration • National Transport Medical Institute
Provisional Governments	<ul style="list-style-type: none"> • Eastern, North Central, and Uva Provincial Councils • In North Central Province, Passenger Transport Authority
NGOs	<ul style="list-style-type: none"> • Ceylon German Technical Training Institute
Bilateral Donors	
INGOs	
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL)

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Railroads
Sri Lankan Government	<ul style="list-style-type: none"> • Sri Lanka Railways (CGR) • National Transport Commission • Ministry of Transport • Ministries of Finance & Planning, External Resources, Public Administration
Provisional Governments	
NGOs	
Bilateral Donors	<ul style="list-style-type: none"> • India • China • Austria (potential) • Belgium (potential)
INGOs	<ul style="list-style-type: none"> • ADB
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL)

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Ports and Maritime
Sri Lankan Government	<ul style="list-style-type: none"> • Sri Lanka Ports Authority (SLPA) • Ministry of Ports & Aviation • Ceylon Shipping Corporation • Sri Lankan Navy • Ministry of Finance & Planning • Ministry of External Resources & Public Administration • Directorate of Merchant Shipping
Provisional Governments	
NGOs	
Bilateral Donors	<ul style="list-style-type: none"> • India (unconfirmed) • China (unconfirmed)
INGOs	
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL) • The Chartered Institute of Shipbrokers (UK) • International Maritime Organization (UK)

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Civil Aviation
Sri Lankan Government	<ul style="list-style-type: none"> • Ministry of Ports & Aviation <ul style="list-style-type: none"> ▪ Civil Aviation Authority of Sri Lanka ▪ Sri Lankan Airlines ▪ Mihin Airlines • Ministry of Transport • Ministry of Finance & Planning • Ministry of External Resources & Public Administration • Sri Lankan Air Force • Heli Tours
Provisional Governments	
NGOs	
Bilateral Donors	
INGOs	
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL) • International Air Transport Association (AITA) • SAARC Transport Association

Overview of Logistics-Related Agencies, NGOs, and Donors	
	Storage and Collection/Distribution
Sri Lankan Government	<ul style="list-style-type: none"> • Ministry of Ports & Aviation • Ministry of Agricultural Development and Agrarian Services <ul style="list-style-type: none"> ▪ Paddy Marketing Board • Ministry of Fisheries and Aquatic Resources <ul style="list-style-type: none"> ▪ Ceylon fisheries Cooperation
Provisional Governments	
NGOs	
Bilateral Donors	
INGOs	
Professional Organizations	<ul style="list-style-type: none"> • Chartered Institute of Logistics & Transport (CILT – SL)

Appendix 3: Cost Estimates for Cold Storage and Ice Making Equipment

Cold storage and ice making equipment	Estimated cost
1 Ton Block Ice Plant	\$14,500
½ Ton Flake Ice Plant	\$15,000
8' X 8' X 8' Ice Storage Unit (approximately 3 ton capacity)	\$8,500
2.5 Ton Mobile Flake Ice Unit *	\$35,000
2.5 Ton Mobile Fluid Ice Unit *	\$24,000

* Could be used aboard larger fishing vessels.

Refrigerated Storage	Estimated cost
Side-by-side 20 foot Chiller and Freezer Rooms	\$32,000

NOTE: Price estimates are CIF Colombo.

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